UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 March 2009</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-8* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Summary

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3-5-09

has been entered.

        This **Non-Final Rejection** is responsive to the preliminary amendment of 3-5-09.

Currently Claims 3-8 are pending in the application.

Response to Amendment

2.   The 35 USC 112 rejections of **Claims 4, 6 and 8** are withdrawn.

Response to Argument

3.   The applicants arguments have been fully considered but are moot in view of

new grounds of rejection.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claims 3, 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **Claim 3**, this claim recites "displaying a means for correcting deviations". It is not clear whether the applicant intends to invoke 112 paragraph 6 with the means for language, since the language provides functional language in addition to the "means for" structure.

Claims 7 and 8 depend on claim 3 and are similarly indefinite for the reason give above for **Claim 3**.

5.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As noted above, the applicant appears to invoke means for as in "displaying a means for correction deviations". There is insufficient support in the specification as to what the "means for correcting deviations". While the examiner notes that the applicant indicates that the user can click on a spider diagram with a mouse, this is considered to be nominal support and does not adequately support the means for in the claim.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 3-5 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Paul **Germeraad**, "Intellectual property in a time of change", Research Technology

Management. Arlington: Nov/Dec 1999. Vol. 42, Iss. 6; p. 34 (6 pages) (hereinafter

Germeraad) in view of **Klenz**, Bradley W; "The Quality Data Warehouse: Serving the

analytical needs of the manufacturing enterprise", Milwaukee 1999, p.521, 9 pgs.

ProQuest ID 53786375. (hereinafter **Klenz**) and further in view of W Jiang, KL Tsui, "An

economic model for integrated APC and SPC control charts"- IIE Transactions, 2000 –

Springer, (hereinafter **Jiang**)

        Official Notice is taken of the following elements:

        Using computer systems, including hardware and software, to automate

process steps, such as taught by Germeraad and Klenz (and Fowler below) are

old and well known in the art.

        Using computer graphic user interfaces is old and well known in the art.

        The use of popup windows in these user interfaces to convey information

is old and well known.

The use of a control element in a graphical user interface, including in a popup window, is old and well known.

The combination of these elements with the measurement elements of Germeraad and Klenz (and below also with Fowler) would have been obvious to one of ordinary skill in the art at the time of the invention because adding these ele–ents, known in the art of computing, would have provided a predictable result by providing a GUI with popups and controls. This combination with the teachings of Germeraad and Klenz (and Fowler below), would not destroy either the functionality of either the subject of the Official Notice or the combined teachings of the cited references.

Regarding **Claim 3**, Germeraad teaches:

3. A method for controlling a process flow, comprising:

determining a plurality of ideal characteristic variables for the process flow that describe a sub-aspect of the process flow and define a desired target for each sub-aspect;

determining actual characteristic variables of the sub-aspects of the process flow at an observation time point and the actual state of the process flow in the observation time period is described by the actual characteristic variables;

Page 35, Germeraad teaches the use of a radar diagram with sub aspects that measure various business process attributes.

the actual points are graphically connected by connecting lines so that the area enclosed by the connecting lines is a measure of the quality of the process flow in the observation time period.

Page 35, Klenz suggests using a radar diagram so that the points measured on the axes are connected to form an area.

Germeraad does not teach, but Klenz teaches

determining a plurality of deviations of the actual characteristic variables from the corresponding ideal characteristic variables with the changes over time of the actual characteristic variables being included; and

page 4 para 1-3, Klenz teaches the application of Statistical Process Control (i.e. Six Sigma methods) to measure variables in a process so that deviations can be tracked and corrected over time.

representing the ideal characteristic variables as an optimum point in a display field of a visualization system and the actual characteristic variables are shown as an actual point at a distance from the optimum point and

page 6 under data warehouse basics, Here Klenz suggests measuring various process capabilities (i.e. being in control of a process or not suggests that ideal characteristics of a process are charted – when those variable are out of control, Klenz suggests using SPC techniques to correct the deviations.

Klenz and Germeraad are addressing issues with how to manage the data that companies have in an efficient way. Both references teach where the multitude of data makes it difficult to efficiently measure what is going on in a firm.

Germeraad suggests the use of the Radar Diagram to efficiently capture and display data so that managers can see what is happening at a glance. Germeraad suggests this because of the wide amount of data that is available to measure.

Klenz teaches that companies can apply SPC techniques to efficiently measure and react to the vast amounts of data that is gathered. Klenz teaches that this data is more than just traditional manufacturing data, but can come from other parts of the organization (see page 1 para 1).

One of ordinary skill in the art would combine Germeraad with Klenz to achieve a predictable result by applying the statistical process control techniques of Klenz to the radar diagram of Germeraad to provide a radar diagram that provides overall process indicators to indicate when the business variables indicated on the radar diagram were out of control or not. The advantages would be providing a compact visual that efficiently summarizes information and provides the benefit of also indicating statistical control, thus providing a predictable result.

Further, Germeraad teaches the need for companies to effectively manage and make decisions based on information that is presented in graphical format (i.e. a radar

diagram). One of ordinary skill in the art would understand that the radar diagram's graphical indications (e.g. one measure is lower on a scale than would be desired by management) provide a basis for making decisions by management by indicating where the organization is with respect to what is being measured.

Klenz teaches a quality data system that uses known tools to measure quality aspects, including the standard statistical process control charts. On page 2 para 10, Klenz states "To make enterprise-level quality decisions, data from these individual systems must be combined into meaningful information". The decisions Klenz is referring to underscores the understanding that one of ordinary skill in the art would have, that systems that measure some aspect of an organizational process, do so for– the purpose of management to make decisions based on information those measurements provide. Implicit here is the recognition, also held by one of ordinary skill in the art, that a problem identified by these measurements (e.g. a process IP measurement in Germeraad that is unacceptable; or a quality measurement in Klenz that suggests a measurement is too high or low) requires a solution - management exists to manage problems highlighted by the measurement systems taught by both Germeraad and Klenz.

Germeraad and Klenz do not teach forecasting in time data for their combined teachings, as per:

identifying trends for each sub-aspect based on the plurality of ideal characteristic variables; and

choosing a future point in time;

defining a desired target at the future point in time for each sub-aspect based on the identified trends;

deriving values for the actual characteristic variables of the sub-aspects at the future point in time based on the actual characteristic variables of the sub-aspects at the observation point in time

Jiang teaches:

identifying trends for each sub-aspect based on the plurality of ideal characteristic variables; and

page 513 column 1, the one step ahead approach uses existing trends of variables (i.e. sub aspects) based on whether they are in control according to an SPC approach (i.e. ideal characteristic values).

choosing a future point in time;

page 513 column 1, the "one step ahead" APC and SPC approach chooses a future point in time

defining a desired target at the future point in time for each sub-aspect based on the identified trends;

page 513 column 1, the one step ahead approach defines a future point that is consistent with past SPC measurements (i.e. a desired target being the maintenance of the process control).

deriving values for the actual characteristic variables of the sub-aspects at the future point in time based on the actual characteristic variables of the sub-aspects at the observation point in time

page 513 column 1, a forecast is derived for the one step ahead (i.e. values derived for the actual characteristic values based on the actual values at the observation point in time.-see discussion column 2.

Jiang teaches the incorporation of automatic process control (APC) into the statistical process control to provide feedback control of processes. Accordingly, Jiang, Germeraad and Klenz all address issues with process management and thus are analogous art.

One of ordinary skill in the art at the time of the invention would have recognized the benefits of using a forecast technique (i.e. "one step ahead") that minimizes mean square error (see page 513 column 1) would have provided the benefit of extending the SPC and APC to incorporate forecasting into a process control regimen and approach, as taught by Germeraad and Klenz to thus realize the benefits of using forecasting to predict where a process is going and thus better anticipate control approaches. The combination of the limitations of Germeraad, Klenz and Jiang also provide a predictable result of the combination of these teachings known in the art - no functionality of any of the references is destroyed by the combination.

Regarding **Claim 4**, Germeraad and Klenz do not teach performing the method with a device that comprises a storage area and a module with a display, However Official Notice is taken that performing method steps using a computer with a storage, processor and a display are old and well known in the art. It would have been obvious to perform the method steps of Claim 3 using a computer because it would make the performing of the method faster and more efficient since it is being performed on a computer.

Regarding **Claims 5 and 7** Germeraad does not teach, but Klenz teaches suggesting a way to correct a deviation of a subaspect. On page 3 paragraph 6, Klenz teaches making "guided decisions" based on historical information – this suggests correcting a deviation of a subaspect.

8.   **Claims 6 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Germeraad** in view of **Klenz** in view of **Jiang** and further in view of:

"Feedback and feedforward as systemic frameworks for operations control" Alan **Fowler**. International Journal of Operations & Production Management. Bradford: 1999. Vol. 19, Iss. 2; pg. 182, (hereinafter **Fowler**).

Regarding **Claims 6 and 8**, Germeraad and Klenz teach the gathering and displaying of data for the purpose of enabling management decisions to improve the underlying process represented by the data. Klenz in particular suggests that analysis

of historical data suggests how management can fix process problems using this analysis as a guide. however Germeraad, Klenz and Jiang stop short of teaching the feedback control (i.e. providing a feedback control loop) for the purpose of enabling the process to be controlled.

Fowler suggests the use of feedback control to control processes – this suggests the use of a control to change and correct a variable that is being measured – see bottom of page 3/ top of page 4: here Fowler teaches the control of an input to control the same kind of business variables taught by Germeraad - i.e.a business process variables.

Thus one of ordinary skill in the art at the time of the invention would have modified the teachings of Germeraad, Jiang and Klenz regarding the measurement of business process variables, to include the step of providing a process input to control the outputs being measured, because it would have provided a predictable result by incorporating a feedback control loop. One of ordinary skill in the art at the time of the invention would have recognized the advantages of incorporating Fowler's teachings because it would have provided a way to correct the variable being measured.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Process Characterization Guidelines, July 1998, EIA/JEDEC PUBLICATION, pp.1-33,

retrieved from the web at: http://www.jedec.org/download/search/jep132.pdf.

Performance assessment measures for univariate feedforward/feedback control

L Desborough, T Harris - The Canadian Journal of Chemical Engineering, 1993 -

interscience.wiley.com

Adaptive and Predictive Modeling for Real-time Statistical Process Control.

HW Huang - 1996 - bcam.berkeley.edu

Real-time statistical process control using tool data

CJ Spanos, HF Guo, A Miller, J Levine-Parrill - IEEE Transactions on Semiconductor

Manufacturing, 1992 - citeseerx.ist.psu.edu

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-

272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

JGS 5-24-2009

/Jonathan G. Sterrett/

Primary Examiner, Art Unit 3623